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UNITED STATES DISTRICT COURT
DISTRICT OF NEW JERSEY

IN RE: AETNA UCR LITIGATION	MDL No. 2020
This Document Relates to: ALL CASES	Master Case No. 07-3541 (FSH) (PS)

EXPERT REPORT DATED August 9, 2010

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I. INTRODUCTION

I am submitting this Expert Report relating to Aetna's use of the Ingenix database to determine Usual, Customary and Reasonable ("UCR" aka "R&C") amounts. I have opined about the flaws in the UCR databases in the expert reports dated March 31, 2004 (HIAA) and June 15, 2006 (Ingenix) submitted in the *McCoy v. Health Net* case before this Court. On April 10, 2008, I appeared before the Court in the *McCoy* matter to explain the basis for my conclusions that Ingenix data is flawed and should not be relied on for R&C benefit determinations. On April 6, 2010, I submitted an expert report in this matter. I incorporate that report, as well as my prior reports and testimony to this Court, in this report.

I have been retained as an expert witness on behalf of plaintiffs ("Plaintiffs") to provide an analysis of the Ingenix Databases, including the Prevailing Healthcare Charge System data and databases ("PHCS Database") and the Medical Data Research ("MDR") database (collectively, "Ingenix Databases") used by Aetna to determine R&C amounts for its subscriber members who have received services from non-participating medical providers (*i.e.,* those who have not agreed to accept Aetna's contracted amount as payment in full). It is my opinion that the Ingenix Databases suffer from fundamental flaws that make them invalid for calculating R&C benefits in compliance with plan terms.

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II. EDUCATION AND PROFESSIONAL QUALIFICATIONS

I am a Director of LECG and work in the Philadelphia, Pennsylvania office. I received my Ph.D. in Statistics with a minor in Econometrics from the Wharton School of the University of Pennsylvania in 1970. Upon graduation, I became an assistant professor at Temple University in Philadelphia, Pennsylvania. I served as Chairman of Temple University's Department of Statistics for five years. I remained at Temple until 1984, when I resigned my tenured professorship position.

Since receiving my Ph.D., I have specialized in the application of statistics in a forensic setting. Much of my professional experience over the past thirty years has involved analyzing data and evaluating whether data are appropriate and sufficient for inferential analysis. I have written on the proper use, reliability and validity of databases (also known as data sets) for particular applications and have lectured widely on these topics. I have been retained by several courts, governmental agencies, states and private organizations to evaluate and/assess a wide variety of databases. These institutions include: the Third Circuit Task Force on Equal Treatment in the Courts, the National Aeronautics and Space Agency (NASA), the United States Justice Department,

the Central Intelligence Agency, the Federal Bureau of Investigation, the Environmental Protection Agency, various states such as New Jersey, California, Connecticut, and Alaska, and numerous municipalities such as New York, Chicago, Philadelphia and Akron, along with numerous private corporations such as: Automatic Data Processing, Amerihealth, McKesson, Lafarge, Merck, Rohm & Haas and Washington Mutual.

III. FEDERAL COURT CERTIFICATION AS AN EXPERT

I have testified in more than 100 cases on the issue of the application and use of statistical evidence. The analyses I have conducted have involved allegations regarding the presence or absence of statistical reliability in data sets. I have also been appointed by courts as a neutral, jointly-agreed-upon expert to undertake specific statistical analyses. My curriculum vita is annexed as Attachment 1.

IV. EXPERTISE

I am an expert in statistics: the science of collecting, classifying, presenting and interpreting numerical data; the analysis of data and the limitations of what can and cannot be properly inferred from data.

V. INFORMATION CONSIDERED IN FORMING MY OPINIONS

In forming my opinions, I have reviewed the materials referred to in my prior reports (dated March 31, 2004 and June 15, 2006) as well as the following categories of documents: Aetna-specific policies and procedures relating to R&C including discussions among claims personnel; R&C training materials; materials related to use of Aetna's internal data or outdated data or a percentage of Medicare or Tiering Methodology; Documents relating to profiling, including profiling guidelines and internal discussions about their use; Deposition testimony excerpts

including from Ingenix personnel (Carla Gee) and Aetna personnel (Deborah Justo, Francis J. Traceski, Antonio Rocchino and Dr. James Cross) and certain interrogatory answers.

Weil Gotshal letter dated December 17, 2009 to Aetna subscriber counsel listing the number of records and the percentage of Aetna's data contribution to Ingenix.

Documents identified in this report or in my prior report.

VI. DISCUSSION

A. Overview

Aetna defines R&C in relevant part as:

> Only that part of a charge which is reasonable is covered. The reasonable charge for a service or supply is the lowest of:
> - the provider's usual charge for furnishing it; and
> - the charge Aetna determines to be appropriate, based on factors such as the cost of providing the same or a similar service or supply and the manner in which charges for the service or supply are made; and
> - the charge Aetna determines to be the prevailing charge level made for it in the geographic area where it is furnished.
>
> In determining the reasonable charge for service or supply that is:
> - unusual; or
> - not often provided in the areas; or
> - provided by only a small number of providers in the area;
>
> Aetna may take into account factors, such as:
> - the complexity;
> - the degree of skill needed;
> - the type of specialty of the provider
> - the range of services or supplies provided by a facility; and
> - the prevailing charge in other areas.

American Psychiatric Ass'n, Certificate of Coverage, Eff. 01/30/06, AET-C 0000995-1048 at AET-C 0001038-39. The definition in the plan above identifies certain of the core concepts and

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factors necessary for developing an R&C standard. Aetna's form letter to its members interprets "usual and prevailing fees" to include the factors enumerated in the subscriber plans:

> Aetna makes payment based on:
> · the provider's reported services;
> · the prevailing fee;
> · member eligibility and
> · all other plan provisions and limits, including co-pays, co-insurance, and deductibles at the time services are rendered.
>
> When determining the usual and prevailing charge, Aetna considers
> · the type of service or supply that was provided;
> · the skill required or complexity involved;
> · the specialty of the provider; and
> · the prevailing charge level made for the service or supply in the geographic area where it is furnished.
>
> In order to determine the prevailing charge level, Aetna refers to statistical profiles of physician charges for the same or similar services in a geographic area. An independent vendor collects and maintains these charges and Aetna update s the profiles in our claim processing systems every 6 months.
>
> In evaluating whether to allow reimbursement above the normal fee, Aetna reviews material submitted with the claim or the appeal, including:
>
> · written documentation that outlines the unusual circumstances or complexity of the care; and
> · the provider's normal fee for this service when there are no unusual circumstances or complexity for the procedure in question.

AET-00618485. These form documents demonstrate that when determining the R&C amount, Aetna interprets "the prevailing charge level" to require comparison to "other providers' charges . . . in the geographic area where the service is provided." AET-00714123; Cooper AET 00511 ("an amount which is most often charged for a given service by a Provider within the same geographic area").

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In its Frequently Asked Questions About R&C, Aetna provides scripted responses to probable questions about R&C in all of its plans. For example, in response to the question, "What does Aetna consider when determining the Usual and Prevailing charge?," the response is:

> Aetna considers
> · the type of service or supply that was provided
> · the skill required or the complexity involved
> · the specialty of the provider, and
> · the prevailing charge level made for the service or supply in the geographic area where it is furnished.

AET-00618481. Thus, Aetna construes its own plans to require it to consider certain core factors when determining R&C.

If Aetna is to determine R&C consistent with the plan definition and documents sent to its members, it must have a database that allows it to assess these core concepts and factors. These include factors such as the cost of providing the same or a similar service or supply and the manner in which charges for the service or supply are made; the prevailing charge level made for it in the geographic area where it is furnished; whether the service is unusual; not often provided in the areas; provided by only a small number of providers in the area; the complexity; the degree of skill needed; the type of specialty of the provider; the range of services or supplies provided by a facility; and the prevailing charge in other areas. I will refer to these factors as "Aetna Plan Definition Factors" or "core concepts." Ingenix collects and reports minimal information: the CPT code, date of service, geozip and charge. It does not collect or consider any of the information required by Aetna's R&C definition. Aetna primarily relies upon the Ingenix databases to determine R&C. However, the Ingenix databases do not allow one to consider and assess the core concepts and factors which must be considered in determining R&C. In some circumstances, Aetna uses other data (*i.e.*, either its own database, the Aetna market fee schedule, the Medicare

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reimbursement rates, or the Tiering Methodology). These databases also fail to capture data relevant to the core concepts and factors necessary to determine R&C.

Dr. James D. Cross, the Head of National Policy and Operations at Aetna, testified that factors including provider specialty and board certification are properly considered in determining a provider's fee.

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> Q. Does board certification have anything to do with reasonable and customary determinations by Aetna at all?
>
> MR. SIGLER: Object to form. Go ahead.
>
> A. Not as it relates to physicians and what their degree is as an M.D., D.O. There is no qualification by what specialty or board certification as it relates to their usual and customary reimbursement. The difference for board certification and credentialing and specialty designation occurs on the contracted side of our relationship with providers. . . . And in fact, if they are a more specialized individual or they have a market share that they can control more in that particular market than others, the negotiation may imply that it's necessary to pay them more for their services than somebody else in that community.
>
> So when we are negotiating fees, that's where specialty, board certification, the market, other factors come into play as to recognizing whether they command a higher reimbursement.
>
> On the reasonable and customary side of a nonparticipating provider, there is no credentialing and there is no differentiation between their specialty.

Cross Dep. Tr. 107:20-108:24, Mar. 23, 2010 (emphasis added). This confirms my opinion that factors such as provider specialty and board certification affect the Reasonable & Customary charge, but are not considered by the Ingenix Databases.

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Significantly, Aetna uses the Ingenix Databases to automatically determine R&C value through its automated processing system, thereby disregarding the plan terms. AET-04005349-51; *see also* AET-00462524-26 ("The Ingenix data is the primary source for R&C / RCL based benefit determinations."); AET-00063403 ("Aetna determines Reasonable and Customary (R&C) fees by using the provider charge data from Ingenix PHCS. . . ."). Aetna's Head of National Medical Policy and Operations, Dr. James Cross admitted that: "Since 2001, the vast majority of Aetna's claims have been auto-adjudicated, without involvement of a manual claim processor." Dr. James Cross Decl., June 30, 2010, at ¶ 83. Therefore, Aetna's auto-adjudication process does not consider the plan terms before automatically processing nonpar claims.

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Further, Ingenix's 30(b)(6) representative Carla Gee testified that Ingenix "will not opine as to whether or not our database meets the policy language," *i.e.* Aetna's plan terms. Rather, the insurance company using Ingenix must determine whether the Ingenix Database meets its "policy . . . language . . . for defining reasonable [and] customary." Gee Dep. Tr. 375:23-376:23, Mar. 18, 2010.

> Q. When Ingenix performs database support functions or litigation support…do the Ingenix personnel vouch for the accuracy and comprehensiveness of the Ingenix data?
>
> A. …Ingenix will not opine as to whether or not our database meets the policy language or the state mandate,…Ingenix will not opine on what is reasonable or usual or customary or whatever the language may state. That is determined by the insurance companies or the carriers who are using our data to see if our benchmarking databases meet their criteria for defining reasonable or usual or customary, whatever language is in their policy or state mandate.

Id. (emphasis added); *Id.* at 373:13-374:7. Carla Gee's point is that in order to determine R&C, one must consider the plan terms.

Carla Gee further testified that the Ingenix database does not determine the total population of providers; or the percentage of providers it captures for CPT codes in a geozip or the number of providers making a charge. The R&C value may have reflected the charges of a single provider. Gee Dep. Tr. 343:18-344:3, Apr. 21, 2005; Gee Dep. Tr. 147:21-148:11, 162:21-163:14, Apr. 6, 2005. It is not possible to determine how many different providers' charges were used (or not used) in compiling the Ingenix database because Ingenix did not collect provider-specific data. Gee Dep. Tr. 73:21-74:19, 78:17-79:4, Mar. 17, 2010. "The Ingenix outputs are not specific to [the] provider." Gee Dep. Tr. 371:18-372:14, Mar. 18, 2010. Ingenix does not capture the specialty, training, experience, certification, education or licensure of providers. Gee Dep. Tr. 357:1-14; 395:15-397:3, Apr. 21, 2005. Ingenix does not consider or report the place of service which can affect the amount of the charge. Gee Dep. Tr. 260:25-261:8, Apr. 7, 2005; Gee Dep. Tr. 70:6-15, Apr. 6, 2005. Nor does Ingenix account for patient-specific factors, such as age and health status. Gee Dep. Tr. 369:16-19, Mar. 18, 2010.

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Aetna and United Healthcare (a co-defendant in Aetna) also produced three experts. None of these experts offered any evidence or opinion that the Ingenix database could be relied upon for setting valid amounts for R&C. United Healthcare and Ingenix's expert, Dr. Daniel J. Slottje, testified he had "no opinion" as to whether "Ingenix, PHCS, or MDR databases set forth a reasonable and customary charge either actual or derived." Dr. Daniel Slottje Dep. Tr. 158:17-22, May 5, 2010. Aetna's expert Dr. Joskow did not endorse or offer an opinion on Aetna's use of Ingenix for determining R&C: "I am not providing any opinion regarding whether – as a theoretical

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or legal matter – it is 'right or wrong' for Aetna to have used data compiled in this way." Dr. Andrew S. Joskow Expert Rpt. at 26, 32, Apr. 6, 2010. Aetna's expert Dr. Robin Cantor stated: "My analysis does not address in any way how Aetna used the unmodified output of the Ingenix Database to pay ONET claims during the class period." Dr. Robin Cantor Expert Rpt. at 5, Apr. 6, 2010.[1]

Thus, neither UHC, Ingenix nor Aetna offered any expert opinion that the Ingenix database contains the data necessary to assess the core concepts and factors and which could be used to determine R&C. Indeed, the Ingenix database is published with a disclaimer stating that its data, whether actual charge or derived charge, does not reflect or determine R&C.[2]

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1 Similarly, CIGNA's expert, Dr. Monica Noether, also declined to opine on the validity of the databases. Noether Dep. Tr. 217:21-218:3, June 23, 2010.

2 Ingenix publishes both the MDR and PHCS data with the following disclaimer:

> "Client is responsible for decisions made and actions taken based on the database. The database is designed and intended for use by professionals experienced in the uses and limitations of claims processing, and it is client's responsibility to ascertain the suitability of the database for client's purposes. The database is provided for informational purposes only and Ingenix disclaims any endorsement, approval, or recommendation of data in the database." Gee Ex. 12 (PHCS); Ex. 39 (MDR).

Ingenix's Product Schedule agreement prior to 2005 stated:

> "The Data is provided to Customer for informational purposes only. Ingenix disclaims any endorsement, approval or recommendation of particular uses of the Data. There is neither a stated nor an implied 'reasonable and customary' charge, either actual or derived; neither is there a stated nor an implied 'reasonable and customary' conversion factor. Any interpretation and/or use of the Data by Customer is solely and exclusively at the discretion of Customer. Customer shall not represent the Data in any way other than as expressed in this paragraph." PHS 7009738.

In April 2005, Ingenix's Product Schedule agreement reflected the additional italicized language:

"The Data is provided to Customer for informational purposes only. *Customer acknowledges that the Data is a tool that Customer may use in various ways in its internal business.* Ingenix disclaims any endorsement, approval or recommendation of particular uses of the Data *either in general or with respect to Customer's operations. The Data does not provide to Customer* a stated or an implied 'reasonable and customary' charge, either actual or derived. *The Data does not contain* a stated nor an implied 'reasonable and customary' conversion factor. Any *reliance upon,* interpretation *of* and/or use of the Data by Customer is solely and exclusively at the discretion of Customer. *Customer's determination or establishment of an appropriate reimbursement level or fee is solely within Customer's discretion, regardless of whether Customer uses the Data. Ingenix does not determine, on Customer's behalf, the appropriate fee or reimbursement levels for Customer and its business. Customer acknowledges that Ingenix sells both the MDR and the PHCS relative and actual charge databases, and that Customer has decided to license the PHCS database.* Customer shall not represent the Data in any way other than as expressed in this paragraph." PHS 7108744.

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Under Aetna's plan definitions, to assess a reasonable charge for a particular medical service, one must rely on actual charges billed by similar providers for reasonably similar services performed in a relevant geographic area. In order to determine the set of reasonably similar services, the database would need to contain information on the Aetna Plan Definition Factors and others that one would expect to affect the cost of the services, such as: (i) significant differences in provider qualifications, (ii) significant differences in type of medical service provided, and (iii) significant differences in medical market area. Given this information, one could then determine which charges are reasonable and which are "too high." A review of the Ingenix databases shows that they do not (and cannot) satisfy the core concepts of reasonably similar provider qualifications, medical services rendered and medical market area in which the service is performed. In sum, the Ingenix Databases do not allow one to compute a distribution of charges which either satisfy the plan definition or are sufficiently similar that one can reasonably assess which charges are reasonable and which charges are "too high."

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B. Methodology Review

In evaluating the Ingenix Databases, I considered the following general principles:

1. the stated purpose for the data (*e.g.* any relevant or other definition);

2. the data collected and the manner of its collection;

3. the data not collected and the reasons therefore;

4. the steps taken to ensure the accuracy, comprehensiveness and completeness of the data collected;

5. the editing of the data, if any, and whether such editing impacted the resulting distribution of the data and its validity;

6. the end use for the data, and whether the data necessary for such end use have been collected; and

7. whether any biases (distortions) were introduced at any point in the methodology.

VII. OVERVIEW

A. Ingenix Uses Flawed Methodology (Data Contribution and Processing) to Create the MDR and PHCS Databases

In 2000-01, Ingenix consolidated the MDR and PHCS databases and the data contribution and screening (editing) process (*i.e.*, "scrubbing") used to create them. I explain in this report how these databases share a flawed underlying methodology (including both data contribution and editing), which skews downward the amounts reported by the Ingenix databases for the percentiles at and above the 70th percentile ("Upper Percentiles"). As I note, these methodological flaws affect all CPT codes in all geographic areas. More significantly, the data reported does not consider: the cost of providing the same or a similar service or supply; the manner in which charges for the service or supply are made; the prevailing charge level made for it in the geographic area where it is furnished; whether the service is unusual; not often provided in the areas; provided by only a small number of providers in the area; the complexity; the degree of skill needed; and the prevailing charge in other areas; any differentiation of services provided within a CPT code; patient age or health and conditions; patient's prior medical history; the provider's qualifications, credentials, specialty, training or experience; and the place of service (hospital, clinic or doctor's office); or the range of services or supplies provided by a facility.

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The first step in Ingenix's methodology is the collection of data from voluntary Data Contributors ("Step 1"). The data it receives is a convenience sample. Ingenix fails to ensure that the convenience sample is representative of the population of charges. It fails to ensure the

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Contributed Data contains the fields it requested, is not pre-edited to remove high charges, does not contain non-market charges, and reflects each Data Contributor's complete population of relevant charges. It then edits or "scrubs" (*i.e.*, deletes) the data using a "scrubber" prior to analytical processing ("Step 2"). Ingenix's scrubbing is inappropriate for two reasons. First, it uses formulaic edits to identify purported statistical outliers and automatically removes them without factual basis or further investigation to determine if they are truly incorrect data points (and should be removed) or are simply high (or low) charges that should not be removed. The incorrect removal of valid charges, even if removed from both the high and low ends, generally biases the Upper Percentile values downward. If an equal number of valid charges are deleted from the high and low ends, the Upper Percentiles will be biased downward. Even if more valid low charges than valid high charges are removed, the Upper Percentiles will most likely be biased downward. For example, if Ingenix removes just 5 percent of total valid charges from the high end, it would have to remove 4 times that number, or 20 percent, of total charges from the low end before the 80th percentile data element in the "scrubbed" data is the actual 80th percentile of all the valid charges. Secondly, Ingenix's scrubbing combines the charges for a broad range of CPT codes without adjusting for differences in the spread of charges between CPT codes (*i.e.*, the "standard deviation"). This flaw tends to remove valid high data points, particularly in CPT codes having a wide variation in charges (*e.g.*, because different types of providers are billing the same CPT code). This would bias the Upper Percentile values downward.[3]

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Rule 23(a): Commonality

Another fundamental flaw in the PHCS sample is that the basic unit of measurement is incorrect. Provider-specific information is not being collected, patient-specific information is not

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3 The observation noted as the 80th percentile will not be the actual 80th percentile observation. The reported 80th percentile observation will be below the actual 80th percentile. However, its charge value would be

being collected and procedure-specific or place-specific information is not being collected. Thus, specific provider charges are not studied. By way of simple example, consider the following hypothetical: five providers in a particular locality submit charges of $60, $70, $80, $90 and $100, respectively, for a specific procedure. On a provider basis, $90 is the 80th percentile. PHCS, however, determines R&C based on charges. Suppose that there are 100 charges from the $60 provider; 60 charges from the $70 provider, 20 charges from the $80 provider, 15 from the $90 provider and 5 from the $100 provider. Based on these charges, the 80th percentile would be $70, not $90. That is, the result would appear to indicate that R&C is $70, but the determinations of the R&C is premised on the total number of charges collected, not the usual charge of specific providers for specific procedures.

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The third and final step is the analysis and publication of the scrubbed data ("Step 3"). Ingenix produces MDR and PHCS data for each three-digit zip code area in the nation. The PHCS database calculates and reports the percentile distribution of reported charges for individual CPT codes having at least nine occurrences in the final database. For CPT codes for which fewer than nine charges are reported, the PHCS database reports a "derived" percentile distribution of charges. PHCS derives charge data for approximately 90 percent of all CPT codes because the vast majority of data reported is for the most common 10 percent of CPT codes. The MDR Database derives charge data for all CPT codes. Derived percentile amounts are estimated for both PHCS and MDR by: (i) grouping together various CPT charges after the different CPT charges have purportedly been adjusted so that they are comparable; (ii) computing the percentiles of the combined CPT charges; and (iii) readjusting the percentiles of the combined data to represent the percntiles of the different CPT charges. However, Ingenix fails to adjust for the differences in the spread of charges (i.e.,

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equal to or less than the actual 80th percentile value.

standard deviation) within each CPT code among the combined CPT charges and, as a result, the derived percentiles are all biased (other than the mean). This flaw tends to result in understatement of the Upper Percentiles of the derived PHCS and MDR data for those CPT codes with a large spread of charges. This means that the estimation of the relevant data points for the calculation of R&C are biased by Ingenix's improper methodology for deriving data.

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The end result of Ingenix's methodology is that the Ingenix data:

- Does not use appropriate statistical methodology (including sampling, data editing or data estimation) and as a result, creates data that is biased and inappropriate for use in computing R&C.
- Does not ensure that the data it collects does not pre-screen out valid high charges, does not contain non-market charges, and is complete in that it contains all the requested information on all the Data Contributors' relevant charges;
- Does not ensure that the data it reports is representative of the total population of relevant charges in the geographic area;
- Does not collect or report data by provider;
- Does not report[4] the qualifications of the providers billing the charge data (whether medical doctor, nurse practitioner, physician assistant, etc.);
- Does not report the training, experience or expertise of the providers billing the charge data;
- Does not report modifiers billed by the providers;
- Does not report the place of service (*i.e.*, clinic, hospital, medical office) for the charge data;
- Does not report the type of service (*i.e.*, inpatient, emergency, ambulatory surgery) for the charge data;
- Improperly edits out valid charges, which biases the Upper Percentiles of reported data and

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4 I will use the word "report" to mean "collect", "determine", "include" "identify," and "use as a basis for R&C calculations."

- Statistically incorrectly estimates derived percentile data which biases the Upper Percentile values.

Rule 23(b)(3): Predominance

I explain in detail below my critique of Ingenix's methodology and my conclusion that the MDR and PHCS databases are unreliable and invalid for determining R&C amounts for services rendered to Aetna members by out-of-network providers. I also provide an overview of how Aetna's claims system uses the Ingenix data to make R&C determinations.

VIII. DETAILED DISCUSSION REGARDING INGENIX'S METHODOLOGY INGENIX'S DATA CONTRIBUTION FLAWS (STEP 1)

Proper statistical procedures require that Ingenix assess the completeness and accuracy of the data it receives from its Data Contributors, and ensure that its rules are being followed. A Data Contributor database cannot be considered valid when there is inadequate data quality control in place. Ingenix's methodology for selecting a convenience sample[5] without testing or validation results in two fundamental flaws: *first,* one cannot assume that the Contributed Data was representative of the population of charges; and *second*, there were no controls in place to ensure that Data Contributors were contributing appropriate data (*e.g.,* market charge data, complete data reflecting all of their relevant charges, etc.) and were not pre-editing or pre-scrubbing their Contributed Data. The mere existence of large quantities of data would not remedy the fundamental flaws caused by incomplete, unrepresentative and pre-scrubbed Contributed Data.

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Rule 23(a): Commonality

Recent testimony provided by Aetna, CIGNA and Ingenix witnesses have confirmed the numerous deficiencies in Ingenix's data collection process which I discussed in prior reports. These

5 A convenience sampling and the reward system in which reimbursement is based only on the amount of data passing screening entices Data Contributors to eliminate high values when submitting data regardless of whether the charge was valid or not. Another flaw is that the data contributed by each Data Contributor was not established as representative of all its charge data.

deficiencies render the data unusable for the stated purpose of assisting Ingenix customers (such as Aetna) in determining R&C.

A. Ingenix Does Not Receive Useful Data on Provider, Place of Service, Difference in Level of Service or Type of Service within CPT Codes Necessary for Properly Estimating R&C

Ingenix has never consistently received expanded information from its Data Contributors. As a result, Ingenix only uses limited information consisting of the date of service, CPT code (5 digits only rather than 7 digits which would include modifiers), billed charge and provider's zip code. When Ingenix started to collect provider information (*e.g.*, the identity of the provider, the provider's professional degree specialty, etc.), its Data Contributors provided it partially or not at all. As a result, Ingenix continued doing its analysis and created the final PHCS and MDR data without considering provider-specific information. Data Contributors also do not consistently contribute other data fields that Ingenix purports to require, such as patient information, place of service and type of service. Thus, Ingenix does not consider these additional factors in the Ingenix databases.

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Rule 23(a): Commonality

Aetna, CIGNA and Guardian, all confirmed that they do not provide adequate expanded data to Ingenix. CIGNA, for example, provides fewer than half of the allegedly required data fields, and provides *no* provider-specific information (*e.g.*, the name and address of the provider; his or her licensure, specialty, etc.). At least until March 2005, when it apparently stopped contributing data, Guardian continued to contribute only the same limited four data elements that it contributed since the 1970s and it failed to provide provider-specific and patient-specific information. Ingenix has consistently acquiesced in receiving Contributed Data that does not include most of the requested information from Data Contributors and has continued to use only the same four data fields

Rule 23(b)(3): Predominance

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employed since the inception of the HIAA database: billed charge, date of charge, zip code of location where service provided; and CPT code.[6]

B. CIGNA's Contributed Data Illustrates That The PHCS Sample Is A Convenience Sample

Both currently and in the past, CIGNA has maintained multiple claims systems. When I filed my report, "Plaintiffs' Supplemental Expert Report," dated June 15, 2006, I noted that: "CIGNA contributes data to Ingenix from only four of its nine claims systems. The five claims systems from which CIGNA does not contribute data are nationwide in scope. CIGNA stated that it decided not to contribute all its data to Ingenix because contributing additional data would not increase the discount it receives from Ingenix (75 percent). CIGNA has only one claims system from which it contributes data to Ingenix that contains any HCPCS data."[1]

It is my understanding that CIGNA verified that it "has historically submitted claims data to Ingenix from four of its claims systems: Dentacom, Medicom, CIGNA Claims, and Proclaim. As of November 2007 and March 2008, CIGNA ceased submitting data from CIGNA Claims and Medicom, respectively, to Ingenix because these claims platforms processed very few claims. Beginning in November 2009, in addition to Proclaim and Dentacom, CIGNA began submitting claims data for claims processed on Power MHS." Power MHS is one of CIGNA's major claims processing systems.

With respect to its other claims process systems, CIGNA states that:

> CIGNA does not submit data from the rest of its claims engines: single-site MHS, Amisys, MHC, CBH, PowerStepp (CIGNA Voluntary), Worldcare (CIGNA International) or Diamond 950 (CIGNA International). There are several reasons that CIGNA does

6 HIAA, the operator of the predecessor database, stated that these four data fields were selected because they were relatively easy for Data Contributors to submit. HIAA acknowledged they do not provide provider-specific, patient-specific, service-specific information about the charge.

Rule 23(b)(3): Predominance

Rule 23(a): Commonality

> not submit data from the remainder of its claims systems. First, CIGNA is not required by its contract with Ingenix to submit data from any particular claims system CIGNA sends data on a voluntary basis. Second, sending data from the remaining claims systems to Ingenix is not technologically practical. The four claims platforms from which CIGNA has historically sent data to Ingenix have capabilities that allow CIGNA to extract the data that Ingenix needs. Sending data from the remaining claims platforms would require considerable modifications to the claims platforms, and would also require CIGNA to develop an IT solution for extracting the data from those claims platforms. Third, when Ingenix customers send Ingenix a certain volume of data, Ingenix in turn provides those customers with a discount on data from the Ingenix PHCS database. CIGNA receives the maximum discount as a result of the data that it sends to Ingenix. Sending additional amounts of data would not result in any additional discount. Fourth, the claims platforms that CIGNA does not submit data from are minor claims platforms that only comprise a small fraction of the claims processed by CIGNA. Finally, based on the data that goes into the claims platforms, CIGNA has no reason to believe that sending data from Proclaim, CIGNA Claims, Medicom, Dentacom, and Power MHS, but not the remaining platforms, materially impacts the data it send to Ingenix.

Without production of the underlying factual or statistical evidence, CIGNA's claim that "sending all its data would not materially impact the data sent to Ingenix" cannot be verified. It should be noted that this statement is not justified by the mere fact that these claims are only a small percent of CIGNA's total claims. If the deleted claims are disproportionately high priced, and for CPT codes with few observations per zip code, a few claims could drastically change the percentile distribution and UCR estimate. Moreover, CIGNA only started contributing claims data to Ingenix from Power MHS (one of its two major claims engines) in 2009. Even if the data supplied by CIGNA is representative of CIGNA's population of charges, if CIGNA is a high-price insurer (*i.e.,* CIGNA's out-of-network clients tend to use higher priced providers than the clients of other insurers), simply restricting the number of charges sent to Ingenix will bias the Ingenix database.

From a statistical perspective, it is the responsibility of the producer and the user of the data to assure that the convenience sample is a proper and representative sample of the population of interest. As in my supplemental expert report in Health Net dated June 15, 2006, I noted:

> proper statistical procedures require that Ingenix assess the completeness and accuracy of the data it receives from its Data Contributors and ensure that its rules are being followed. A Data Contributor database cannot be considered valid when there is inadequate data quality control in place.

I have subsequently learned that in response to Ingenix's revised Data Submission Information form, although CIGNA certified that it "attests that the service zip code provided in service zip field (example: field #20 on Ingenix's recommended Record Layout) is populated with the zip code where services were rendered which is not necessarily the provider billing address zip code," Ingenix was aware as early as in 2001 that CIGNA could not supply the zip code where the service was rendered, but only the provider billing address zip code. Despite this, Ingenix used CIGNA data until 2009, when it discontinued using CIGNA data because of this problem.

Rule 23(b)(3): Predominance

Rule 23(a): Commonality

I have also learned that, at some time, rather than submitting individual charges CIGNA submitted total charges and total number of occurrences to Ingenix for one of its claim processing data sets. If CIGNA simply groups identical charges together and reports that value and the number of such charges, then that is a valid statistical procedure. However, if CIGNA groups charges of different values and reports the average and the number of charges, then that is an invalid statistical procedure. I am unclear at this time as to which case the average charge sent to Ingenix represents. If it is the latter, then Ingenix's handling of the data is incorrect and biases the percentile data it reports. Rather than discarding the data as useless, Ingenix considered the data as multiple charges,

incorporating them all at the average. This approach obviously biases the UCR estimate down. For example, if there are only 10 charges in a zip code, and the charges average $100, Ingenix would consider these to be 10 individual charges at $100 each, and any charge in excess of $100 would be considered to be above the 80th percentile. However, the $100 average could be composed of five charges at $110 and five charges at $90; therefore, one-half of the charges would incorrectly be considered "atypical" of the charge distribution. To the extent that other contributors supplied aggregated different charge data and Ingenix used the average values as it did for CIGNA, it would bias the distribution profiles used to compute R&C downward.

Rule 23(b)(3): Predominance

Rule 23(a): Commonality

C. Guardian Violated Ingenix's Data Contribution Requirements

Guardian never contributed all of its available data. It produced no charge data relating to anesthesia procedures. Its Contributed Data was limited to certain CPT codes, and specifically excluded data relating to other CPT codes. Except for three modifiers, Guardian's data excluded modifiers which were identified on the providers' billed charges.

D. Aetna Profiling

It is appropriate for a Data Contributor to edit out data errors. However, it is important that Data Contributors do not pre-edit or pre-scrub out data to remove valid charges which it labels "outliers." There are two reasons for this requirement. First, such pre-editing may remove valid charges and biases the percentile values in the collected data. Second, Ingenix's scrubbing process presumes and requires that the Contributed Data is not pre-edited or pre-scrubbed.

Rule 23(b)(3): Predominance

Rule 23(a): Commonality

Aetna was and is Ingenix's largest data contributor. Its contributions to Ingenix are now 25% of the total data Ingenix receives. *See* Weil Gotshal letter, Dec. 17, 2009 to Aetna subscriber counsel. In my prior report, I analyzed Aetna's profiling rules based on Aetna's documents. I have

subsequently learned that Aetna did not follow these rules as written in total. I am advised that discovery is being conducted to determine the extent, if any, to which Aetna removed charges automatically that exceeded the R&C applicable to such claim.

E. Ingenix's Fails to Insist on Compliance with Its Rules or to Audit its Data Contributors and Ignores Problems in Contributed Data Even When It is Aware of Them

Proper statistical procedures require that Ingenix assess the completeness and accuracy of the data it receives from its Data Contributors, and ensure that its contribution rules are being followed. A Data Contributor database cannot be considered valid when there is inadequate data quality control in place.

Despite the importance of Ingenix receiving all available "un-scrubbed" and market rate data (*e.g.*, excluding governmental payor data) from its Data Contributors, Ingenix took no steps to ensure that this occurred. Ingenix did not inquire or overlooked information as to how CIGNA, Aetna or other Data Contributors selected data, or whether they scrubbed it, or included non-market rate data. Aetna took from its interactions with Ingenix that it was free to pre-edit its data to weed out charges in excess of R&C. Significantly, Aetna informed Ingenix that it was pre-scrubbing its data using numerous Profiling rules. Ingenix did not inquire about these Profiling rules, and did not audit Aetna, but simply assumed that Aetna was submitting complete data. In fact, Ingenix agreed to change Aetna's certifications (which admitted non-compliance) to read "yes" instead of "no." Ingenix acknowledges that it is improper for Data Contributors to pre-scrub Contributed Data, but still took no steps to stop it, even when Aetna expressly informed Ingenix it was doing so.[7] Despite

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7 It is both possible and likely that other Data Contributors are pre-scrubbing their Contributed Data prior to sending it to Ingenix. CIGNA, for example, could not state with certainty that it did not pre-scrub its Contributed Data.

Ingenix's understanding that pre-scrubbing biases the data, Ingenix used Aetna's Contributed Data even though it had been pre-scrubbed and incomplete.

Even though its Data Contribution rules require submission of the entire universe of charge data, and Ingenix requires its Data Contributors to certify that they have submitted the entire universe of charge data, Ingenix knew that its Data Contributors (including CIGNA, Guardian and Aetna) continued to contribute less than all of their available data, pre-scrubbed their Contributed Data, and failed to submit information for all required data fields. Yet Ingenix ignored, and continues to ignore, these violations of its stated policy. Neither, Aetna, CIGNA or Ingenix alerted data users that the previously compiled data violated its Data Contribution guidelines.

Rule 23(b)(3): Predominance

Rule 23(a): Commonality

The following relevant chronology makes that clear:

1. Ingenix's pre-November 2004 contribution forms did not request, and Ingenix did not receive, Contributed Data reflecting the entire universe of provider data from its Data Contributors.

2. Commencing in November 2004, Ingenix changed its data contribution form to require each Data Contributor to certify that it was contributing the "entire universe of billed charges" and without alteration or pre-scrubbing.

3. Aetna, CIGNA and Guardian all signed the post-November 2004 certifications (as did other Data Contributors) despite continuing their prior practice of contributing less than the entire universe of billed charges from their claim systems.

4. Even when Aetna told Ingenix it was continuing to pre-scrub its data by using Profiling Rules, Ingenix accepted Aetna's pre-scrubbed data. Ingenix did not audit Aetna's contributions or assess the impact of Aetna's violation of Ingenix's stated rules. Ingenix did not

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take any steps to enforce its stated rules or inform data users that its Data Contribution rules were not being followed or enforced.

5. CIGNA also periodically advised Ingenix that its data did not differentiate between rendering provider (place of service) zip code and billing provider (place of billing) zip code. Despite CIGNA's demonstrated inability to report rendering provider zip codes, Ingenix did not audit CIGNA and did not take any steps (at least until 2009) to ensure that its data was not being further compromised by CIGNA's noncompliant data.

6. Ingenix's attestation form and other certification requirements are simply *pro forma* and failed to ensure statistical accuracy or compliance.

Rule 23(b)(3): Predominance

Rule 23(a): Commonality

The collector of the data in a convenience sample is responsible for testing and verifying the data to ensure that it is not biased and to ensure that its convenience sample is in fact representative of the population of charges. Ingenix failed to properly insure that its rules were followed, and knowingly let CIGNA and Aetna (and possibly others) contribute data (which Ingenix then used) that failed to meet Ingenix's own rules and standards. Ingenix's agreement to let Aetna submit noncompliant data while changing the certifications to indicate compliance is a striking example of acknowledging use of flawed and inadequate data.

IX. INGENIX'S INVALID SCRUBBING METHODOLOGY (STEP 2)

A. Common Data Created by Merger of PHCS and MDR Databases

Ingenix merged the PHCS and MDR databases so that it uses a common data repository ("Common Data") used to create both MDR and PHCS data. The result of this merger is that both databases rely on Common Data. Ingenix applies the same edits and scrubs ("Common Scrubber") to the Common Data for both MDR and PHCS, and uses the same geozips for both MDR and PHCS, a change from prior years when different geozip groupings were used for

MDR and PHCS. The MDR and PHCS final fee schedules differ as a result of differences in the final preparation of each database, after the Common Scrubber has scrubbed the Common Data. The PHCS and MDR 80th percentile values are different, despite Common Data and the Common Scrubber, because (i) PHCS reports "actual data" for some CPT codes in some geographic areas while MDR reports "derived" data for all CPT codes in all geographic areas; (ii) Ingenix uses different methods of combining different CPT codes (*i.e.*, PHCS uses bodily systems to group CPT codes while MDR groups CPT code ranges); (iii) Ingenix uses different conversion factors (*i.e.*, relative values which measure the average level differences between charges among CPT codes) for MDR and PHCS Derived Data; and (iii) MDR uses an inflation factor to adjust data over time, while PHCS does not.[8] In creating Common Data, Ingenix uses MDR's grouping method and relative values.

Rule 23(b)(3): Predominance

Rule 23(a): Commonality

B. <u>The Common Scrubber Used for Both MDR and PHCS</u>

MDR and PHCS are Contributor databases, meaning that the data used in them is entirely contributed by entities other than Ingenix. Data Contributors submit their data on tapes or disks, and transmit it to Ingenix. Ingenix then edits, or scrubs, the Contributed Data by contributor and computes the credit due to each contributor for submitting data for the PCHS database. Ingenix only gives credit for data that passes (*e.g.*, is not eliminated by) its scrubs. As I described in my prior report, Ingenix does an initial preliminary scrubbing to eliminate obviously invalid data entries. For example, Ingenix eliminates data with obvious keypunch errors (*e.g.*, a CPT code or a

8 The difference in 80th percentile values in its two databases demonstrates that the R&C amount is sensitive to various data manipulations.

zip code which does not exist). This preliminary scrubbing is statistically proper and is not challenged.[9]

Ingenix uses other scrubs which bias the results reported and may create serious errors in what is reported. It groups together ranges of CPT codes and then subjects the Contributors' data to a method which scrubs and eliminates valid high and low charges as "outliers" which are deemed "unreliable."[10] This method is inappropriate because it eliminates valid charges and biases the estimation of the percentiles reported.

Rule 23(b)(3): Predominance

Rule 23(a): Commonality

The Common Scrubber reviews each data record contributed by the Data Contributor which has not already been eliminated (*e.g.*, because it contains modifiers).[11] The stated reason is that eliminated charges represent modifiers that would affect the way a provider bills. This procedure, by definition, means that this database cannot be used to assess the reasonableness of any medical charges submitted to an insurer with these modifiers. Charges associated with given CPT codes are grouped together based on numerical ranges of CPT codes. All charges for CPT codes within that CPT code range are combined and are subjected to a Common Scrubber formula.

In order to combine all of the charges for the different CPT codes within the CPT code range, Ingenix converts each charge by the relative value for that CPT code (*i.e.*, the adjusted or standardized data value is the actual charge divided by the relative value of its CPT code). The

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9 One of these preliminary scrubs was to eliminate all charges of $1 or less. Significantly, Ingenix eliminated this $1 charge scrub. Ingenix has chosen to rely on its low screen edit. However, eliminating all charges of $1 or less from Medical and Surgical services as obvious data errors was a better procedure than relying upon a so-called statistical edit.

10 Ingenix uses a Common Scrubbing Process on all the data contributed by data contributors to MDR and PHCS. According to Ingenix, there are only two minor exceptions where it does not do so, both with respect to the PHCS database.

11 Ingenix's Contributed Data includes charges originally billed with these modifiers. Some Data Contributors (including CIGNA and Guardian) contribute charge data but delete modifiers. They will be included in the database, whereas data with modifiers is excluded. Ingenix's failure to audit its Data Contributors or to effect proper quality control over the Contributed Data causes indiscriminate and inconsistent treatment of charges billed with modifiers. Charges with modifiers are thus improperly compared to charges which were compiled without modifiers.